REMARKS/ARGUMENTS

Upon entry of this reply, claims 1-20 will remain pending.

Reconsideration and allowance of the application are respectfully requested.

**Information Disclosure Statements**

Applicants express appreciation for the inclusion with the Office Action of an initialed copy of the Form PTO-1449 submitted with Applicant's Information Disclosure Statement filed December 4, 2006 so that the Examiner has confirmed consideration of Applicant's Information Disclosure Statement.

Applicants note that the form is not completely initialed because the English abstract cited in the Other Documents portion of the form is not initialed. For the Examiner's convenience, another copy of the form is provided herewith. Applicants therefore request that the Examiner include a completely initialed form with the next communication from the Patent and Trademark Office.

**Claim Of Foreign Priority**

Applicants also express appreciation for the acknowledgement of the claim of foreign priority as well as receipt of the certified copy.

**Response To Art Based Rejections**

The following rejections are set forth in the Office Action.

(a) Claims 1-3, 7-10, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/0074068 to Howland.

(b) Claims 1-3, 7-10, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,649,979 to Kazusa in view of US 2002/0074068 to Howland.

(c) Claims 4-6 and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,649,979 to Kazusa in view of US 2002/0074068 to Howland, and further in view of JP 64-60402 to Miyamoto.

In these grounds of rejection, the rejections primarily contend that Howland discloses VECTRAN® which is asserted to be the same as Applicants' recited polyester/polyarylate filaments. The rejections contend that one having ordinary skill in the art would have arrived at Applicants' recited at more than 30 filaments. Moreover, the rejections assert that the features recited in Applicants' dependent claims, such as a diameter of less than 40 microns, would have been obvious based upon Howland, or Kazusa in view of Howland taken alone or in view of Miyamoto.

The rejection based upon Howland as a primary reference does note that VECTRAN® is a non-preferred embodiment. However, the rejection contends that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including non-preferred embodiments.

In response, Applicants submit that Howland is preferably directed, for reasons of low cost and low abrasion, to puncture-resistant layers comprising fibers having a tensile strength or tenacity of less than about 15 g/denier. For example, claim 1 of Howland is directed to "A tire anti-puncture device comprising: a puncture-resistant layer comprising at least two layers of woven fabric material, each layer having a taped fiber density of at least about 80% of full in at least one of the warp and fill and comprising fibers having a tenacity of less than about 15

g/denier, wherein the puncture-resistant layer is shaped and configured to form a belt within and around the periphery a tire".

Moreover, at paragraphs [0004] and [0005], Howland discloses that puncture-resistant layers or liners have also been utilized to provide puncture resistance to tires. Howland discloses that, for example, extruded or molded strips made of various resins, but containing no fibers therein, have been utilized as puncture-resistant layers. In addition, para-aramid felt strips made of felted fiber having a strength or tenacity of greater than 15 g/denier (gpd) have also been utilized. Howland discloses that other examples of puncture-resistant materials utilized in the prior art for providing puncture resistance to tires include Vectran™ liquid crystal polyester and/or para-aramid coated fabrics made of fibers having a strength or tenacity of greater than 15 g/denier.

Howland discloses that the extruded or molded strips utilized in the prior art tend to have relatively poor puncture resistance, while the materials formed of high tenacity fibers (i.e., having a tenacity greater than 15 gpd), while providing good puncture resistance, tend to be expensive and can cause an undesirable level of abrasion, which can damage the tire cores and/or inner tubes of the tire in which they are installed. Howland discloses that there is accordingly a need in the art for puncture-resistant materials and layers for use in tires having a desirable combination of good puncture resistance, relatively low cost, and a relatively low degree of abrasion, so as to prevent damage to the tire and/or inner tube in use.

Still further, at page 3, paragraph [0027], Howland discloses, referring to the construction of puncture-resistant layer 12, that a wide variety of fiber types can potentially be used within the scope of the invention comprising a variety of natural and/or synthetic materials, most typically polymeric materials. Howland discloses that, for cost considerations, preferred embodiments of

his invention utilize fibers and yarns that are not formed of pure "high performance" fibers, such as KEVLAR™ para-aramid and VECTRAN™ liquid crystal polyesters, having a fiber strength/tenacity of greater than about 15 g/denier. Howland discloses that most preferred, within the context of his invention, are yarns and fabrics containing fibers having a strength/tenacity of between about 3 and about 8 g/denier, which fibers are much less expensive than the above-mentioned high performance fibers, while providing adequate tensile strength to resist penetration when constructed, configured, and treated as described herein below. Howland discloses that in one preferred embodiment, polyamide (nylon) fibers are used for forming puncture-resistant fabric layer 12; and in another preferred embodiment, puncture-resistant fabric layer 12 is formed of one of the commercially available types of polyesters having a fiber tenacity of between about 3 and about 8 g/denier.

Thus, following the overall disclosure of Howland, one having ordinary skill in the art would not have any desirability of performing experimentation pertaining to fibers as recited in Applicants' claims to arrive at the subject matter recited in Applicants' claims. In this regard, following the disclosure of Howland, Applicants submit that one having ordinary skill in the art would have performed experiments with the commercially available polyesters having a fiber tenacity of between about 3 and about 8 g/denier. Accordingly, multifilament threads of more than 30 polyester/polyarylate filaments as recited in Applicants' claims would not have been be arrived at.

Thus, one having ordinary skill in the art would not have arrived at a bicycle tire comprising a carcass; a tread rubber; at least one reinforcement layer containing strength supports comprising multifilament threads of more than 30 polyester/polyarylate filaments, the

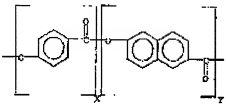
filaments being spun from molten liquid-crystal polymer, arranged between the carcass and the tread rubber and/or between carcass layers below the tread rubber and/or within the tread rubber.

Regarding the rejections wherein Kazusa is utilized as a primary reference, Applicants note that the Kazusa is prior to the development of Vectran®, and refers to the position of the break-down protection between the carcass layers. Applicants submit that, as with the rejection based upon Howland as the primary reference, any modification of Kazusa with Howland would involve the preferred embodiment of Howland. Therefore, if for the sake of argument the disclosures of Kazusa and Howland were combined, any such combination would include a layer containing fibers directed to preferred embodiments of Howland.

Therefore, any combination of Kazusa and Howland, would not arrive at a bicycle tire comprising a carcass; a tread rubber; at least one reinforcement layer containing strength supports comprising multifilament threads of more than 30 polyester/polyarylate filaments, the filaments being spun from molten liquid-crystal polymer, arranged between the carcass and the tread rubber and/or between carcass layers below the tread rubber and/or within the tread rubber.

Moreover, the dependent claims are patentable for the reasons set forth above as well as for the combination of features recited in the dependent claims. Thus, dependent 2 further patentably defines claim 1 by including that the polyester/polyarylate filaments have a diameter of less than 40 μm. For example, one having ordinary skill in the art following the disclosure of Howland would not have any desirability to perform experiments to arrive at the claimed subject matter, especially when Howland discloses that multifilament threads as recited by Applicant are not preferred.

Claim 3 further patentably defines the subject matter recited in claim 1 by including that the polyester/polyarylate has the following structure:



Claim 4 further patentably defines the subject matter recited in claim 1 by including that the multifilament threads are present in the reinforcement layer as threads running parallel to one another and not intersecting, with a thread count of 130 to 480 threads per 10 cm.

Claim 5 further patentably defines the subject matter recited in claim 4 by including that the multifilament threads have a fineness of 200 to 950 dtex.

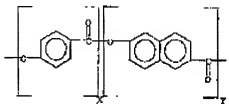
Claim 6 further patentably defines the subject matter recited in claim 4 by including that the multifilament threads are arranged at an angle of 40 to 50° to the tire circumferential direction and crosswise to the multifilament threads of a fabric layer beneath.

Claim 7 further patentably defines the subject matter recited in claim 1 by including that the multifilament threads in the reinforcement layer are present in a fabric, and the fabric is stretchable in the tire circumferential direction.

Claim 3 further patentably defines the subject matter recited in claim 7 by including that the fabric is a woven band with warp threads of stretchable material in the tire circumferential direction and with weft threads of the multifilament thread.

Claim 9 further patentably defines the subject matter recited in claim 1 by including that the tire contains two or more reinforcement layers.

Claim 10 further patentably defines the subject matter recited in claim 2 by including that the polyester/polyarylate has the following structure:



Claim 11 further patentably defines the subject matter recited in claim 1 by including that the multifilament threads are present in the reinforcement layer as threads running parallel to one another and not intersecting, with a thread count of 200 to 300 threads per 10 cm.

Claim 12 further patentably defines the subject matter recited in claim 2 by including that the multifilament threads are present in the reinforcement layer as threads running parallel to one another and not intersecting, with a thread count of 130 to 480 threads per 10 cm.

Claim 13 further patentably defines the subject matter recited in claim 2 by including that the multifilament threads are present in the reinforcement layer as threads running parallel to one another and not intersecting, with a thread count of 200 to 300 threads per 10 cm.

Claim 14 further patentably defines the subject matter recited in claim 3 by including that the multifilament threads are present in the reinforcement layer as threads running parallel to one another and not intersecting, with a thread count of 130 to 480 threads per 10 cm.

Claim 15 further patentably defines the subject matter recited in claim 3 by including that the multifilament threads are present in the reinforcement layer as threads running parallel to one another and not intersecting, with a thread count of 200 to 300 threads per 10 cm.

Claim 16 further patentably defines the subject matter recited in claim 12 by including that the multifilament threads have a fineness of 200 to 950 dtex.

Claim 17 further patentably defines the subject matter recited in claim 14 by including that the multifilament threads have a fineness of 200 to 950 dtex.

Claim 18 further patentably defines the subject matter recited in claim 5 by including that the multifilament threads are arranged at an angle of 40 to 50° to the tire circumferential direction and crosswise to the strength supports of the fabric layer beneath.

Claims 19 and 20 further patentably define the subject matter recited in claims 1 and 2, respectively, by including that the tire contains one reinforcement layer. For example, following the disclosure of Howland, one having ordinary skill in the art would not have provided one reinforcement layer as recited in Applicants' claims.

Therefore, the rejections of record should be withdrawn for each of the pending claims, and each of the pending claims indicated to be allowable over the prior art of record.

**CONCLUSION**

In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw the rejections of record, and allow each of the pending claims.

Applicants therefore respectfully request that an early indication of allowance of the application be indicated by the mailing of the Notices of Allowance and Allowability.

Should the Examiner have any questions regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

Wolfgang KLAPP et al.

Neil F. Greenblum
Reg. No. 28,394

Arnold Turk
Reg. No. 33094

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GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191